

REMARKS

Claims 1, 2 and 5-8 stand rejected under 35 USC 103(a) as being unpatentable over Boeke in view of Hirsch and Hiraoka. Claims 1-8 stand rejected under 35 USC 103(a) as being unpatentable over Hiraoka in view of Hirsch and Boeke. These rejections are respectfully traversed.

Claim 1 recites a method for electroless plating that includes adding an inorganic filler to a polymeric material, molding the material to obtain a polymeric mold, irradiating the mold with a laser having a wavelength of 600 nm or shorter, charging the irradiated area of the mold by generating charged and scattered substances on the surface of the laser irradiated area of the polymeric mold, and immersing the mold in an ionic noble aqueous solution.

As described by applicants, the claimed filler limits the location of the charged and scattered substances to the irradiated regions. Boeke fails to disclose the relationship between adding inorganic fillers to a polymer material and the ability to limit the location of charged and scattered substances in an irradiated region. This is because Boeke only describes irradiating a material with a laser in the infrared region to generate heat, not to produce the claimed charged and scattered substances as claimed.

Hirsch only describes dipping a polymeric material into a liquid solution of palladium as a catalyst and after processing electroless plating. Hiraoka discloses using a laser having a wavelength of 150 to 370 nm to irradiate the surface of a fluorine-containing resin through a basic solution. Since the laser light is irradiated through a basic solution, charged and scattered substances are not generated.

Accordingly, none of the cited references disclose, or even mention, an improved pretreatment method for electroless plating that includes generating charged and scattered substances on the surface of a polymeric mold as claimed. The Examiner maintains that charged and scattered substances can be produced at many wavelength including the wavelengths disclosed in Boeke. The Examiner states that if applicants "can show that the laser wavelength ,

in the claimed range provides unexpected results (i.e. providing the charged and scattered substances), while that of Boeke would not, then the examiner would withdraw the rejection.”

As explained in the article submitted with the attached Information Disclosure Statement, when doing an ablation process, the wavelength of the laser is important (*See* "Material processing with excimer lasers" H K Toushoff and T Butje / Proc. 5th Int. Conf. on Lasers in Manufacturing 35-43 September 1988 (ISBN 1-85423-021-2)). “Especially for polymeric material it is necessary to process at an appropriate wavelength exciting certain boundings and not dissipating exceeding energy into heat. The absorption of radiation proceeds such rapidly that it leads directly to an upper electronic level without nuclear motion.” (*See id.*, page 37, Influence of wavelength on the ablation process).

As described in the specification, applicants have found that light with the wavelength 600nm or shorter produces the desired charged and scatter substance. Irradiating the surface of a polymer material with a light in an infrared region (760-830nm), produces rapid molecule vibration--resulting in the generation of heat without ablation. In comparison, irradiating the surface of a polymer material with a laser in the ultraviolet region (14-400nm) or the visible region (400-760nm), produces a larger photon energy than the infrared laser. The larger photon energy can decompose molecules of a high polymer joint state producing ablation, which results in the production of charged and scattered substances.

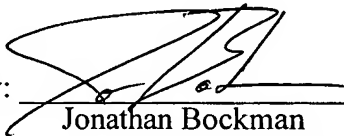
Since non of the cited reference disclose the importance of the wavelength in producing charged or scattered substances, or even mention producing charged and scattered substances, one of ordinary skill in the art would not be lead to change the wavelength of the laser in Boeke to produce charged and scattered substances as claimed. Accordingly, claim 1 should be allowed.

Claims 2-8, which depend from claim 1, should be allowed for at least the same reason. For the forgoing reason, a notice of allowance is solicited.

Applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952**, referencing docket no. 204552022500.

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Respectfully submitted,

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